Simulation Based Acquisition:

Is It SMART?

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SIMULATION BASED ACQUISITION is the integrated process, culture, and environment through which quality products are rapidly and economically developed, fielded and sustained. *Modeling & Simulation enables the execution of SBA.*

The Army's vision for SMART is a process in which we capitalize on Modeling and Simulation (M&S) technology to address the issue of system development and life-cycle costs through the combined efforts of the ~~requirements, training and~~

What Will SMART Achieve?

- **Reduced Total Ownership Cost (TOC), Time to Initial Operating Capability (IOC), and Logistics Tail**

- **Increased Supportability, Maintainability, and Military Worth**

- **More Effective, Cost Efficient Training at Individual, Crew, and System Level**

How Does SMART Reform Acquisition?

- **SMART Enables the Acquisition Workforce to Depict System Design Alternatives Digitally and Provide Access to all System Stakeholders**

- **Distributed Access to Developing Digital Design Allows Assessment of Proposed Changes for Impacts to all Acquisition Functions**

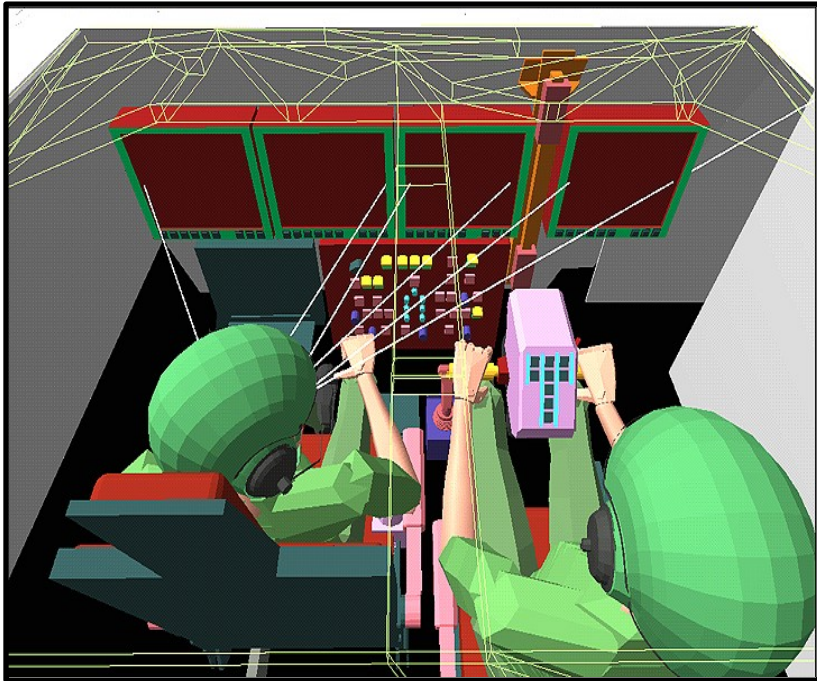- **System Design Evolves With Optimization Across all Functions Vice at the Expense of one Another**
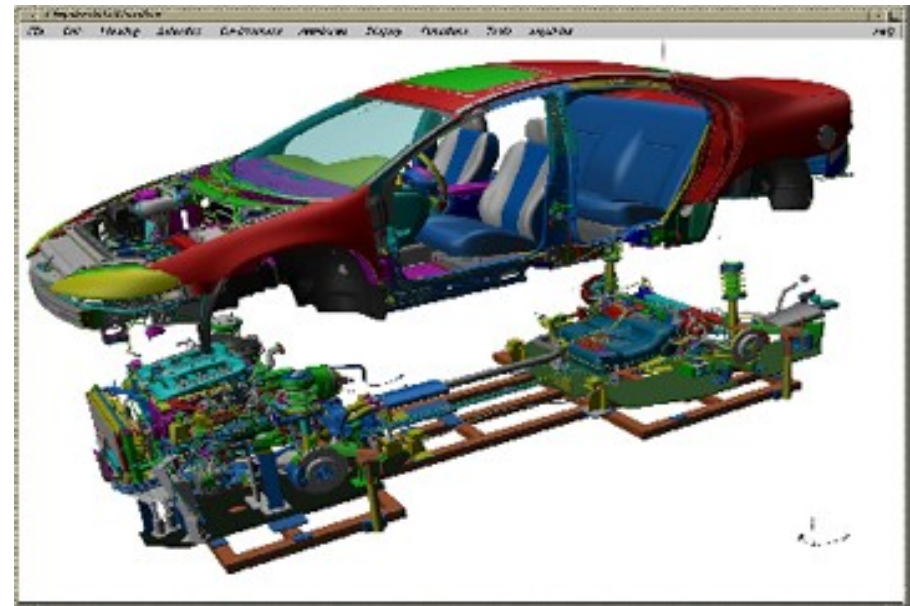
Design Model for Assessing MANPRINT for Grizzly Breacher

- **Incorporate Long Term Planning for the Right mix of Simulation and Testing**

- **Evolve the Virtual T&E Infrastructure**

- **Conduct "What-if" Drills for Early Development of T&E Plans and Scenarios**

- **Accelerate the Synergies Between the Testing and Training Communities**

- **Ensure T&E Community Participation in all M&S Planning and Accreditation to Facilitate Acceptance**
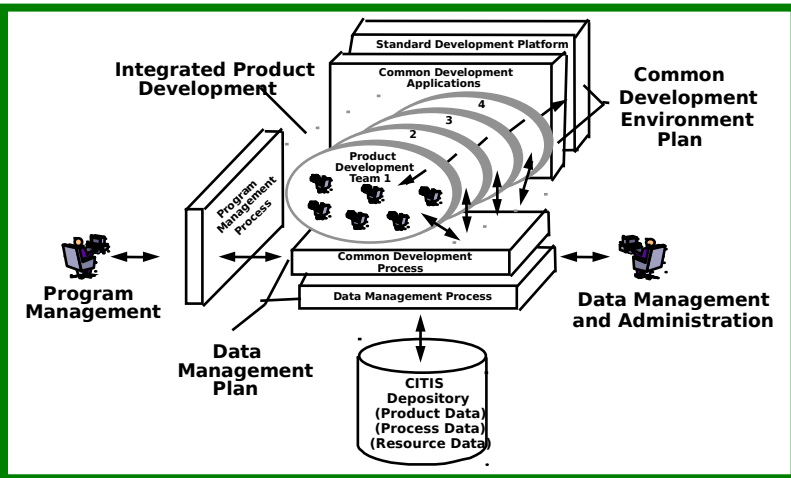
Digital Acquisition

Combat Mobility Systems distributed Integrated Digital Environment

- **SMART Leverages IDE to Support Seamless Data Transfer Across Acquisition Functions, Phases, and Programs**

- **IDE Facilitates Seamless Data Transfer Between the Advanced Concepts and Requirements (ACR); the Research, Development and Acquisition (RDA); and the Test, Exercises and Military Operations (TEMO) Domains to Support Smart Product Model Initiative, System Supportability, Training, etc.**

How Do We Institutionalize SMART?

- **Simulation Support Plans (SSP)**

- **Army Flagship Programs:**

  - **Apache**

  - **Close Combat Tactical Trainer (CCTT)**

  - **Crusader**

  - **Future Scout and Cavalry System (FSCS)**

- **Symposium (24-27 Jan 99 in San Antonio, TX)**

- **SMART has Benefit not Only for new Start Programs but for Fielded Systems as Well**

- **Program PIPs**

- **Interface Between Apache and Hellfire Missile**

- **Apache Crew Trainer**

Close Combat Tactical Trainer (CCTT)

- **CCTT Provides Combined Arms Simulation Environment**

- **CCTT can be Employed Explore Doctrine and for Future Systems to Influence Final Design**

- **Analysis Conducted During System Development can be leveraged to Develop More Effective Training**

Crusader

- **Crusader was Developed Using a CAD System (Pro-Engineer)**

- **Crusader Program Operates Within a Digital Integrated Environment That Digitally Links the PMO, Contractor, TARDEC, Assorted Test Ranges, and Other Activities**

- **IDE and M&S Tools Facilitate Collaboration Between PM Crusader the TRADOC System Manager (TSM), and Trainers**
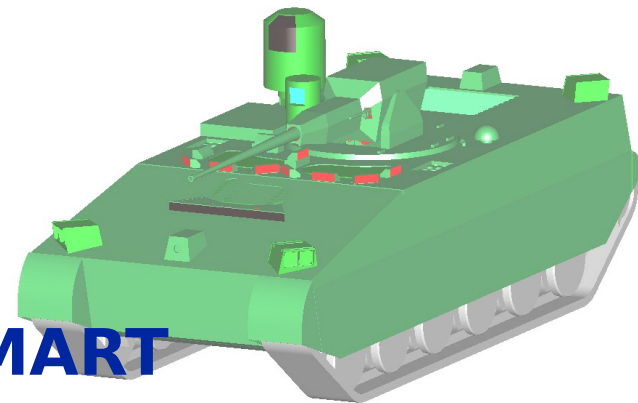
Future Scout and Cavalry System (FSCS)

- **FSCS Prior to MS I**

- **Ideally Poised to Benefit From SMART**

- **FSCS Being Developed Jointly With UK; use of M&S Facilitates the Collaboration**

- **FSCS can be Developed Through Distributed Product Description Approach**

What is the Role of the Requirements Community?

- **Cost/Performance Tradeoff Analysis**

- **Early ID of Unrealistic Requirements**

- **Early ID of Enabling Technologies**

- **Earlier Opportunity to Address Life Cycle Cost**

- **Use Smart Product Models to aid Threat Assessment & Mission Area Analysis**

What is the Role of the Training Community?

- **Assess Impact of TTP and Doctrine on Design Concepts**

- **Trained Crew Simultaneous w/ 1st Unit off Production Line**

- **Re-use of Software and Simulation to Support Embedded and Distributed Training**

What Will a SMART Future Look Like?

Assessment of Virtual Prototypes in Synthetic Environments Allows Stakeholders to Evaluate Systems for Compliance with Requirements, Performance, Optimized Design, and TTP and Doctrine Development